and handles only remaining. Three and four handles have been substituted, in some cases, for the double handle of the earlier vessels. The cover, with the dummy mouth and handles, of course occupies the position previously occupied by the true neck and handles on the top of the vase. As these crown-shaped covers are found in the lowest stratum, the "earliest city" discovered by Dr. Schliemann at Hissarlik, it follows, if the history of these forms has been correctly stated above, that the whole of the Hissarlik antiquities are of comparatively recent protohistoric date, though belonging, no doubt, to a people in a barbarous condition of culture, which accounts for the number of rude stone implements found from top to bottom throughout the excavations.

The so-called crest of the helmet of Athena (p. 283, Hissarlik), is a further degradation of these crown-shaped tops, and represents the dwarfed survival of one of the handles, the connecting links being represented by three specimens in the collection at South Kensington, where the vestiges of all three handles are shown in their proper places, and these were subsequently replaced by one, transferred for convenience' sake from the position formerly occupied by the three to the centre of the lid. In short, the history of every form may be traced by connecting links in the specimens exhibited at South Kensington, the whole collection forms a continuous sequence which, by judicious arrangement of connected forms, is capable of demonstration, and it is to be hoped that some such arrangement may be adopted before this interesting collection leaves the place. To apply the expression "Darwinism" to such a sequence of forms is no mere figure of speech, it expresses the truth as fully in its relation to savage art and ornament as to the forms of nature. Conservatism, acquired habits, and incapacity for improvement on the one hand, love of variety, economy of time and trouble, and imperfect copying on the other, combine to produce those slow and gradual changes which are characteristic of all barbarous art. Every object marks its own place in sequence by means of its form, and it is the recognition of this principle which supplies the place of written records in those prehistoric and protohistoric phases of culture with which we are dealing. Earlier forms are retained side by side with the more advanced ones and are applied to those objects and uses for which they appear fittest. If any evidence were wanting to disprove the absurd imputations that have been cast upon the genuineness of these antiquities, these connected varieties would alone suffice to prove that they were the work of a people in a very primitive condition of civilisation. Whatever difference of opinion may exist as to some of Dr. Schliemann's deductions no reasonable archæologist will be found to dispute the extraordinary merit of his discoveries. We are glad to hear that he is about to resume his excavations at Hissarlik. To the deep research and disinterested enthusiasm which has already placed him in the front rank of explorers, will now be added a large amount of archæological experience and knowledge of allied forms that he has acquired since his first excavations were conducted at this place, leading us to hope that his future discoveries will exceed them all in interest and importance.

PROFESSOR BELL'S "SELBORNE"

The Natural History and Antiquities of Selborne, in the County of Southampton. By the late Rev. Gilbert White, formerly Fellow of Oriel College, Oxford. Edited by Thomas Bell, F.R.S., F.L.S., F.G.S., &c., Professor of Zoology in King's College, London. 8vo. 2 vols. (London: Van Voorst, 1877.)

THE edition of this classic work for so many years expected from the hands of Prof. Bell, has at length appeared, and readers will regard it with much gratification and a little disappointment. The former feeling will arise from the large amount of new matter which it contains, and the latter from the conviction which cannot but force itself upon them that more was to be made of the whole than the editor seems to have been aware of. Yet Prof. Bell's long life—it is more than fifty years since he first won his spurs in the field of science—and his invaluable services in so many departments of zoology, render us very unwilling to say more than we are compelled in detraction of this, his latest labour, and the child of his old age. He writes now, as he always has written, pleasantly enough, but he fails to give us the notion that he has done the best he could with the materials placed at his disposal, and with his other unequalled opportunities. It is evident that his task grew upon him, and that a considerable portion must have been printed off before its extent was determined. This, indeed, is not an uncommon thing with young authors and editors; but Prof. Bell's literary experience, and the long time he is known to have had the present work in preparation, should have guarded him from an error of the kind. We might almost infer that when the memoir was written he had not mastered all the details of the deeply interesting correspondence which forms the bulk of his second volume, and certainly that he had not decided how many, and which, of the letters it contains should be given to the world. It is sufficient for us now to say that there is not one of them that could have been spared, for we must presently return to their consideration.

That any memoir of Gilbert White must, from the scarcity of facts relating to him, give a meagre account of that great and estimable naturalist, we are ready to admit, and that Prof. Bell's is at the same time far more copious than any other that has been published, will be obvious to all who are acquainted with the subject. But we cannot help regretting that the chief biographical facts have not been set forth in a clearer light than they appear, and proper as it is to tell us something of all the members of the family, we unfortunately find least is told us of those members of whom we should like to know most. Gilbert White had three brothers who were distinctly men of capacity above the average, beside two others much less, or hardly at all, distinguished. Of the former, Thomas, we are told, was successful in trade, and became a F.R.S., but in what trade or when he died we are left ignorant. Benjamin was the well-known publisher of natural history books—among others of Pennant's—for whom Prof. Bell has some hard words, not, perhaps, wholly undeserved, but it is very probable, to say the least, that had not Gilbert, through his brother, become acquainted with Pennant the "Natural History of Selborne" would never have

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been written. The third remarkable brother was John, who was for a considerable time chaplain at Gibraltar, of which place he wrote a zoology that unfortunately was never printed, and of which the manuscript seems to have vanished, though Prof. Bell says the introduction to it is in his possession. Pity it is he has not given us this fragment, for some of the hints and suggestions that Gilbert was always imparting to John, his "most steady and communicative correspondent," must surely be therein contained, and it could not fail to have been a valuable addition to these volumes. In the next generation were "Jack," son of the aforesaid John, and a pupil of Gilbert's, who thought highly of him, and Samuel Barker, another nephew, an agreeable and evidently valued correspondent of his uncle's. It seems hardly possible but that diligent research would not have recovered more of these younger men than we find here recorded.

Of Gilbert himself we doubt not Prof. Bell has done all in his power to gather information, and in some respects he has been successful. Born at Selborne in 1720, he went to school at Basingstoke, and to Oxford in 1739. There he graduated B.A. in 1743, and the following year was elected to a Fellowship at Oriel, which he enjoyed till his death. Taking orders he successively held two curacies in Hampshire, one at Selborne till 1752, when he filled the office of Proctor (*Junior* Proctor, Prof. Bell is careful to tell us) for a year. Then he took another Hampshire curacy for a couple of years, at the end of which time he came once more to live at Selborne, which remained his home till his death. In 1757 he accepted the living of Moreton-Pinkney, in Northamptonshire, but the preferment must have been small, as it did not incapacitate him from holding his Fellowship, and, according to the custom of the times, residence was not required of him. The following year his father died, but he did not come into the family property at Selborne—"The Wakes," now possessed by Prof. Bell—until the death of an uncle in 1763. He seems to have made Pennant's acquaintance about 1767, or perhaps a little earlier. In 1768 we find him writing to Banks, and the following year began his correspondence with Barrington, who, in 1774 and 1775, communicated to the Royal Society those ever-memorable monographs of the British *Hirundines*, which first made known White's powers of observation and felicity of expression. In 1774 he refused no fewer than three college livings, for he was doubtless in easy circumstances, and once more accepted the curacy of his birth-place. At the age of sixty-nine his single book was published, and he survived its appearance just four years. Another event in his life must be noted here—his attachment to the sister of his college friend Tom Mulso. What hindered their union does not appear, but in 1760 the lady was married to Mr. Chapone, and was subsequently the authoress of several well-known works, and a celebrated "blue-stocking." We have to thank Prof. Bell for collecting most of these facts and dates now for the first time published, but they are not very easily gathered from his memoir.

Of course we have no occasion here to review the letters to Pennant and Barrington which formed the original "Natural History of Selborne." Their place in literature and science is assured. It were impertinent to speak of their merits, or to indicate their few—very few—defects. Being the results of the personal experience of their author they will hold their ground for all time. Never before, perhaps, was there so careful an observer, and since, we know of but one other so accurate. That other has no doubt surpassed his predecessor in the ingenuity of his induction and the versatility of its application, but it is no detriment to Gilbert White that he should be ranked as an observer second only to Mr. Darwin. Numerous editors have tried their hand in annotating this ever-popular work, and many more will make the same attempt. Prof. Bell is chary—too chary, perhaps, of his comments—but if he errs he errs on the safe side, and readers who have been disgusted with the inanity or the flippancy of the notes to some recent editions, will rejoice that in him they have an editor whose remarks, if they be but few, are always to the point, and never in bad taste.

Now we ought to consider the new letters, but the length of this article warns us that we must be brief in what we say of them. They remove the present edition from comparison with any other, and we have sincerely to thank Prof. Bell for having shown us, by printing them, that White was even more than had formerly appeared. Every grace of style, every power of thought—in a word, every good quality which was foreshadowed in the famous epistles to Pennant and Barrington is doubled, or more than doubled in intensity in the letters now given to the public—letters, too, which were never prepared by their writer for publication. We have him before us as the instigator to good works, the sage adviser in matters literary and scientific, the self-denier, the man of affectionate relations, the man of high aspirations, yet humble; simple, yet full of humour; a recluse, yet a man of the world in the best sense. We long to subjoin extracts from them, but want of space renders that impossible. Our readers will read and judge for themselves. It must suffice to say that there are more than one hundred from Gilbert's pen, of which scarcely a dozen have ever been printed before, in addition to a most interesting correspondence between John White and Linnæus on the zoology of Gibraltar, and letters from various members of the family which faithfully reflect, as it were, in a remarkable manner Gilbert's own nature, besides a few—too few, unfortunately—addressed to him by men like Lightfoot, Skinner, Montagu, and Marsham. For the sake of these we readily forgive all the shortcomings of the present volume—even the want of a table of contents and of a good index.

OUR BOOK SHELF

Proceedings of the London Mathematical Society, vol. viii. (November, 1876, to November, 1877), 321 pp. (Messrs. Hodgson.)

THIS goodly-sized volume bears testimony to the activity of its members, and contains twenty-nine papers, published *in extenso*. We may specially refer to one or two. The "Pure" side of the subject of mathematics, as usual, is the favoured one, and furnishes memoirs by Prof. Cayley on the condition for the existence of a surface cutting at right angles a given set of lines, on a general differential equation, geometrical illustration of a theorem relating to an irrational function of an imaginary variable, on the circular relation of Möbius

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